

REMARKS

I. INTRODUCTION

In response to the Office Action dated November 30, 2007, claims 1, 16 and 30 have been amended. Claims 1-5, 8-13, 15-20, 23-28, 30-34 and 37-42 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. PRIOR ART REJECTIONS

A. The Office Action Rejections

On pages (3)-(10) of the Office Action, claims 1-5, 8-13, 16-20, 23-28, 30-34 and 37-42 were rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of Fuisz et al., U.S. Patent 6,718,310 (Fuisz) and McArdle et al., U.S. Patent 6,622,126 (McArdle). On page (11) of the Office Action, claim 15 is rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of Fuisz, McArdle and Von Kohorn, U.S. Patent 5,227,874 (Von Kohorn).

Applicants' attorney respectfully traverses these rejections in view of the amended claims above and the arguments below.

B. The Applicants' Independent Claims

Independent claims 1, 16 and 30 are directed to performing customer management relationship processing in a computer. Claim 1 is representative, and comprises the steps of: (a) specifying both a focal product set and an analysis product set, prior to performing a pattern detection function, based on one or more user-specified attributes, wherein the focal product set includes products that trigger a sequence of customer purchasing behavior for a specified time interval and the analysis product set includes products that describe the customer purchasing behavior; (b) selecting a segment of customers from a database managed by the computer based on one or more user-specified attributes; (c) accessing customer transaction data from the database managed by the computer to be used in the pattern detection function, using the selected segment of customers; and (d) performing the pattern detection function in the computer using the customer transaction data accessed from the database managed by the computer, wherein the pattern detection function finds patterns in the customer purchasing behavior, as evidenced by the customer transaction data, related to a sequence of when purchases occur, by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set using a time frame for an initial focal product set purchase, and a number of

time intervals for one or more analysis product set purchases before and after the initial focal product set purchase.

C. The Fuisz Reference

Fuisz describes methods that provide for auditing of on-line commercial transactions to determine what products are the primary motivations for a customer to begin an on-line shopping session. When a purchase is made during a shopping session, the method determines whether a purchased product is related to a previous "prime motivator" product. If so, the product is designated as a derivative product and a derivative count associated with the product is incremented. If not, the product itself is designated a prime motivator product and a prime motivator count associated with the product is incremented. The method may be repeated for every purchase fielded by an on-line commercial site.

D. The McArdle Reference

McArdle describes a system, program, and method which makes segment migration, the movement of individuals between segments over time, easily trackable, and provides a visualization that makes the results of the analyses useful. The preferred embodiment tracks which people are in which segment at each time period, then builds a file that gives, by person, a description of which segment(s) each person belonged to during each time period. From this table, a display is drawn which indicates in an intuitive manner the migration of members of different segments over time. These enhanced segmentation analyses allow the user to easily study and predict customer behaviors.

E. The Von Kohorn Reference

Von Kohorn describes methods for the evaluation of stimuli such as broadcast commercials intended to promote purchases by shoppers. The methods quantify the effectiveness of controlled variables of stimuli and of inducements associated therewith. The immediate impact and degree of erosion of the impact of stimuli on families and on individual household members are measured. Inducements can take the form of printouts, such as monetary coupons, dispensed in homes of broadcast audience members who have responded to a task. The system and method for evaluating responses to broadcast or telephone programs, such as television programs, includes an instructional signal, such as a signal modulated onto a signal transmitted concurrently with the television program,

or time-multiplexed therewith. At each of a plurality of remote receiving stations, one or more members of an audience has the opportunity to respond to a situation presented in the program by entering a response or a selection on a keyboard. The system includes at each remote receiving station a memory responsive to the instructional signal for storing acceptable responses, and a comparison circuit for comparing responses entered at the keyboard with those stored in the memory. Also provided is electronic circuitry for scoring the responses in accordance with commands from the instructional signal, and a recording device for providing a permanent record. A prize-winning respondent can select a product from a listing and apply the value of a prize to the purchase price of the selected product.

F. Applicants' Independent Claims Are Patentable Over The References

Applicants' invention, as recited in independent claims 1, 16 and 30, are patentable over the Fuisz, McArdle and Von Kohorn references, because the claims recite limitations not found in the references.

The Office Action asserts that Fuisz teaches the limitations Applicants' independent claims 1, 16 and 30 directed to "specifying both a focal product set and an analysis product set, prior to performing a pattern detection function, based on one or more user-specified attributes, wherein the focal product set includes products that trigger a sequence of customer purchasing behavior for a specified time interval and the analysis product set includes products that describe the customer purchasing behavior," at column 2, lines 25-35 and lines 40-44; column 3, lines 41-45; column 4, lines 50-56; and column 7, lines 20-25, which are set forth below:

Fuisz: column 2, lines 25-35 and lines 40-44

Embodiments of the present invention provide a system for identifying and measuring customer motivations in purchasing environments. The system monitors customers as they select goods or services (collectively, "products") for purchase. Of the products that are selected, the system identifies those products that are prime motivators, those products that are related to the customer's motivation to enter the on-line store. The system also identifies other products that are secondary motivators, products that the customer purchases as ancillary to the prime motive products.

According to an embodiment of the present invention, a computer system that engages in traditional on-line commerce also monitors purchases made by on-line customers to identify "prime motivator products," those products that caused the customers to initiate a shopping session. The system also identifies "derivative products," those products that are purchased during a shopping session that, most likely, are not products that caused a customer to initiate a purchasing session.

According to an embodiment of the invention, prime motivator products and derivative products may be logged during every shopping session handled by an on-line commerce system. Thus, the present invention builds a database of information that possesses much more statistical validity at lower expense than any monitoring system known in the art.

Fuisz: column 3, lines 41-45

According to the present invention, a product database 140 may store information in addition to that identified above. The product database 140 may additional fields representing a "prime motivator count" and a "derivatives count."

Fuisz: column 4, lines 50-56

The method 1000 thus builds a database that identifies purchasing decisions made by the consuming public. The database identifies products that represent a customer's primary motivation for "entering" the on-line "store." The database also identifies derivative products, those products whose purchase may be ancillary to the prime motivator product.

Fuisz: column 7, lines 20-25

FIG. 6 illustrates another method 5000 according to an embodiment of the present invention. According to method 5000, prime motivator products may be identified based upon the times between product purchases. According to the embodiment, the method 5000 records the time of the beginning of a shopping session and the time of each product purchase (Steps 5010, 5020). At the conclusion of the shopping session, for each purchased product, the method 5000 determines an incremental time of purchased measured as the time between the most recent preceding purchase (Step 5030). The first purchased product is designated a prime motivator product. Also, purchased products may be designated as prime motivator products if their associated incremental time of purchase is greater than the average time between purchases (Step 5040). All other products are designated derivative products. The method increments the prime motivator counts and derivative counts of the purchased products in the product database 140.

Applicants' attorney disagrees.

Applicants' claimed invention differs from the above portions of Fuisz in that it recites a different sequence of steps, namely (a) specifying both a focal product set and an analysis product set, (b) selecting a segment of customers from a database, (c) accessing customer transaction data from the database using the selected segment of customers, and then (d) performing a pattern detection function by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set.

Fuisz does not perform this sequence of steps. For example, Fuisz identifies prime motivators and derivative products in the midst of an online shopping session, rather than specifying a focal product set and an analysis product set before performing a pattern detection function.

Nowhere does Fuisz allow a focal product set and an analysis product set to be specified, before the online session is audited (or a pattern matching function performed), based on one or more user-specified attributes.

The Office Action also asserts that McArdle teaches the limitations Applicants' independent claims 1, 16 and 30 directed to "selecting a segment of customers from a database managed by the computer based on one or more user-specified attributes," at column 3, lines 4-7, 10-11, 35-41 and lines 58-63; and column 4, lines 50-53, which are set forth below:

McArdle: column 3, lines 4-7, 10-11, 35-41 and lines 58-63

FIG. 2 shows an exemplary screen 200 of a computer program according to the preferred embodiment. Here, five sample customer segments, as might be found in a retail department store, are shown, including Inactive Shoppers 202, Women's Clothing 204, Electronics 206, Garden Shop 208, and Hardware 210. The user is given the option of selecting the source data 215 (here, the user has chosen "May Sales") and the target data 220 (the user has chosen "June Sales"). Note that because this innovative system tracks segment migration over time, the source data 215 should reflect an earlier period than the target data 220.

In this example, the user has selected the "Inactive Shoppers" 202. According to the preferred method, the system has therefore chosen the May inactive shoppers segment, which is comprised of 13,283 shoppers, in this example, and has created a clear visual representation of the behavior of these customers, as a group, in June. A set of lines is drawn connecting the source segment with each of the target segments, with a line thickness dependent on the percentage of segment members moving to each target segment.

* * *

With reference now to FIG. 3, and according to the preferred embodiment, a typical segment migration analysis process would occur as follows. First, information relating to customer transactions is collected and stored in a database (step 310). The information would include the customer ID, what items were bought, and when the items were bought. The customer ID might be loyalty card ID (e.g., Walmart's shoppers card or Tom Thumb's Reward card), a customer credit card number, or a customer driver's license number.

* * *

Next, two or more monthly segmentations are selected and these datasets are merged into a single Segment Migration dataset using the Customer ID as the common key (step 340). For example, for a given customer ID, the dataset would show what segment that customer was assigned to in May, June and July.

McArdle: column 4, lines 50-53

This system provides many advantages in customer segmentation analysis. In the process of creating the data to drive the visualizations, a table is built that captures who was in which segment at a given time, and, when complete, this table captures each person's migration history. This data can be re-integrated with the customer's data warehouse to support marketing actions. That is, once the customer segmentation migration history has been displayed, the user can target specific customers, with particular patterns of migration for targeted marketing or promotions.

Applicants' attorney disagrees.

Applicants' independent claims 1, 16 and 30 differ from McArdle in that they recite "selecting a segment of customers ... based on one or more user-specified attributes," and then "accessing customer transaction data ... to be used in the pattern detection function, using the selected segment of customers."

In contrast, the above portions of McArdle describe a different function, i.e., McArdle collects customer transaction data, which is then used to assign customers to segments. Moreover, McArdle teaches the use of customer segments for a completely different reason, namely for monitoring segment migration, but nowhere refers to segment selection in the context of identifying customer transaction data for a pattern detection function that finds patterns in customer purchasing behavior, as evidenced by the customer transaction data.

In addition, the Office Action asserts that Fuisz teaches the limitations Applicants' independent claims 1, 16 and 30 directed to "accessing customer transaction data from the database managed by the computer, to be used in the pattern detection function, using the selected segment of customers," at column 4, lines 50-56; and column 5, lines 4-7, which are set forth below:

Fuisz: column 4, lines 50-56

The method 1000 thus builds a database that identifies purchasing decisions made by the consuming public. The database identifies products that represent a customer's primary motivation for "entering" the on-line "store." The database also identifies derivative products, those products whose purchase may be ancillary to the prime motivator product.

Fuisz: column 5, lines 4-7

Advantageously, every purchase recorded by the system 100 may be recorded as either a prime motivator or as a derivative. Thus, the data collected by the system 100 is not anecdotal as would be acquired by survey evidence and does not suffer from statistical undersampling as would occur by survey evidence or customer surveillance. The method 1000 builds a database of customer behavior based on observed customer purchases and the order in which the purchases were made.

Applicants' attorney disagrees.

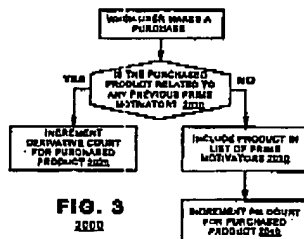
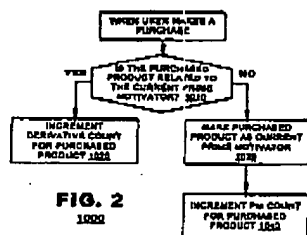
As noted above, Applicants' claimed invention differs from the above portions of Fuisz in that it recites a different sequence of steps, namely (a) specifying both a focal product set and an analysis product set, (b) selecting a segment of customers from a database, (c) accessing customer transaction data from the database using the selected segment of customers, and then (d) performing a pattern detection function by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set.

To reiterate, Fuisz does not perform this sequence of steps. For example, Fuisz generates the customer transaction data and identifies prime motivators and derivative products during an online shopping session, rather than accessing customer transaction data using a segment of customers selected from a database, after a focal product set and an analysis product set has been specified, and before the pattern detection function is performed. Nowhere does Fuisz describe customer transaction data to be accessed from a database, using a segment of customers selected from a database, for use in a pattern matching function, based on a pre-specified focal product set and a pre-specified analysis product set.

Finally, the Office Action asserts that Fuisz teaches the limitations Applicants' independent claims 1, 16 and 30 directed to "performing a pattern detection function in the computer using the customer transaction data accessed from the database managed by the computer, wherein the pattern detection function finds patterns in the customer purchasing behavior, as evidenced by the customer transaction data, related to a sequence of when purchases occur, by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set using a time frame for an initial focal product set purchase, and a number of time intervals for one or more analysis product set purchases before and after the initial focal product set purchase," at Fig. 3; column 5, lines 38-57; column 4, lines 1-4; and column 7, lines 10-41, which are set forth below:

Fuisz: Fig. 3

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Fuisz: column 5, lines 38-57

FIG. 3 illustrates a method 2000 according to another embodiment of the present invention. According to this second method 2000, the system 100 maintains an ever-increasing list of prime motivators during a single shopping session. Again, prior to a first iteration of the method 2000, the list of prime motivators is set to a null value. Each time a purchase is made, the method 2000 may be called. In step 2010, the method 2000 determines whether the purchased product is related to any prime motivators that may have been identified previously during the shopping session (Step 2010). If so, the purchased product may be designated as a derivative and the method 2000 may increment the derivative count for the purchased product in the product database (Step 2020). Otherwise, the list of prime motivators may be amended to include the purchased product (Step 2030). Also, the method 2000 may increment the prime motivator count for the purchased product in the product database 140 (Step 2040). At the conclusion of Step 2020 or Step 2040, the method 2000 may conclude and, if necessary, return to a larger purchasing routine for completion.

Fuisz: column 4, lines 1-4

According to an embodiment of the present invention, the method 1000 may be integrated into the process used by an on-line system for handling product purchases. For example, it may be called by a larger purchasing routine executed by the on-line systems. Purchasing routines for on-line commercial systems are known per se and need not be described here. When invoked, the method 1000 determines whether the product being purchased is related to a prime motivator (Step 1010). If the purchased product and the current prime motivator are related, the purchased

product is designated a derivative. Within the product database 140, a derivative count for the purchased product is incremented (Step 1020). Thereafter, the method 1000 may terminate and, if necessary, return to a larger purchasing routine for completion.

Fuisz: column 7, lines 10-57

FIG. 6 illustrates another method 5000 according to an embodiment of the present invention. According to method 5000, prime motivator products may be identified based upon the times between product purchases. According to the embodiment, the method 5000 records the time of the beginning of a shopping session and the time of each product purchase (Steps 5010, 5020). At the conclusion of the shopping session, for each purchased product, the method 5000 determines an incremental time of purchased measured as the time between the most recent preceding purchase (Step 5030). The first purchased product is designated a prime motivator product. Also, purchased products may be designated as prime motivator products if their associated incremental time of purchase is greater than the average time between purchases (Step 5040). All other products are designated derivative products. The method increments the prime motivator counts and derivative counts of the purchased products in the product database 140.

Consider the method 5000 in operation using the exemplary purchases illustrated below in Table 1. The table identifies seven purchases. Table 1 below records the times of purchase of each of the products and also the incremental time of purchase for each product.

As shown in the table, the average time between purchases is 1.87 minutes. Two of the seven products, shampoo and bandages, have incremental times of purchase that are greater than the average time between purchases. Accordingly, the shampoo, the bandages (and also the Tylenol) all are designated as prime motivator products under the method 5000 of FIG. 6. The remaining products are designated derivative products.

TABLE 1

Product	Time of Purchase	Incremental Time of Purchase	Prime Motivator or Derivative?
Tylenol	1 min.	1	Prime Motivator
Thermometer	2 min.	1	Derivative
Shampoo	7 min.	5	Prime Motivator
Conditioner	8 min.	1	Derivative
Hairbrush	9 min.	1	Derivative
Bandages	12 min.	3	Prime Motivator
Topical Antibiotic	13 min.	1	Derivative
Average Time Between Purchases			1.86

Applicants' attorney disagrees.

As noted above, Applicants' claimed invention differs from the above portions of Fuisz in that it recites a different sequence of steps, namely (a) specifying both a focal product set and an analysis product set, (b) selecting a segment of customers from a database, (c) accessing customer

transaction data from the database using the selected segment of customers, and then (d) performing a pattern detection function by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set.

Again, Fuisz does not perform this sequence of steps. For example, Fuisz identifies prime motivator purchases and derivative purchases as product purchases are made, in order to store this information with the recorded purchase. Nowhere does Fuisz teach or suggest performing a pattern detection function by comparing the customer transaction data related to the focal product set to the customer transaction data related to the analysis product set, wherein the customer transaction data is accessed from the database using a segment of customers selected from the database, and both the focal product set and analysis product set have been specified before the pattern detection function is performed.

Moreover, Applicants' independent claims 1, 16 and 30 differ from Fuisz in that they recite "comparing a focal product set to an analysis product set using a time frame for an initial focal product set purchase, and a number of time intervals for one or more analysis product set purchases before and after the initial focal product set purchase." In contrast, Fuisz only performs an analysis of purchases following a prime motivator purchase (i.e., a derivative in Fuisz is defined as a product purchased after the prime motivator). Fuisz never identifies a derivative purchase as occurring before a prime motivator purchase.

The Von Kohorn reference fails to overcome the above deficiencies of the Fuisz and McArdle references. Recall that Von Kohorn was cited only against dependent claim 15, and only for teaching to specify a customer level to determine how to aggregate customer data. Moreover, the cited location in Von Kohorn refers merely to identifying the individuals of a household responding to broadcast commercials, but says nothing about specifying a customer level to determine how to aggregate the customer transaction data.

Consequently, Applicants' attorney submits that independent claims 1, 16 and 30 are allowable over the Fuisz, McArdle and Von Kohorn references. Further, dependent claims 2-5, 8-13, 15, 17-20, 23-28, 31-34 and 37-42 are submitted to be allowable over Fuisz, McArdle and Von Kohorn in the same manner, because they are dependent on independent claims 1, 16 and 30, respectively, and because they contain all the limitations of the independent claims. In addition, dependent claims 2-5, 8-13, 15, 17-20, 23-28, 31-34 and 37-42 recite additional novel elements not shown by Fuisz, McArdle and Von Kohorn.

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III. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

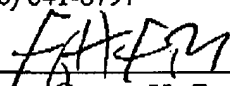
Respectfully submitted,

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